detecting in the sprinklers whether the pressurized compressible fluid or a mixture of the pressurized compressible fluid and water is entering the sprinklers; and

preventing over-spinning of a turbine in each of the sprinklers upon detection of the entry into the sprinklers of the pressurized compressible fluid or the mixture of the pressurized compressible fluid and water;

whereby damage to the bearings, drive shaft, turbine and/or related nozzle drive components of the sprinklers is avoided.

22. The method of Claim 21 wherein the step of preventing over-spinning is accomplished by applying a braking force to the turbine.

23. The method of Claim 21 wherein the braking force is applied by a float.

24. The method of Claim 22 wherein the braking force locks the turbine against rotation.

25. The method of Claim 22 wherein the braking force is a drag force applied against a component of the rotor type sprinkler selected from the group consisting of the turbine, a gear train reduction, a nozzle and a head.

26. The method of Claim 21 wherein the step of preventing over-spinning is accomplished by re-directing the pressurized compressible fluid or the mixture of the pressurized compressible fluid and water around the turbine.

27. The method of Claim 26 wherein the redirecting is performed by a valve.

28. The method of Claim 21 wherein the pressurized compressible fluid is air.

29. The method of Claim 21 wherein the supply line is fed with the pressurized compressible fluid for between about two hours and eight hours.

30. The method of Claim 21 and further comprising re-filling the supply line and sprinklers with pressurized water in the Spring and during such refilling:

detecting in the sprinklers whether the compressible fluid or a mixture of the compressible fluid and pressurized water is entering the sprinklers; and

preventing over-spinning of a turbine in each of the sprinklers upon detection of the entry into the sprinklers of the compressible fluid or the mixture of the compressible fluid and pressurized water.

31. A sprinkler comprising:

a riser having a fluid inlet connectable to a source of water for normal operation, and to a source of compressed air to blow water out of the sprinkler to prevent freezing during cold weather;

a turbine mounted in the riser which is driven by the incoming fluid; and

a speed control mechanism mounted in the riser and including a valve that limits the rotational speed of the turbine when the incoming fluid is compressed air, but has substantially no effect on the rotational speed when the incoming fluid is water.

32. A sprinkler comprising:

a housing having a fluid inlet connectable to a source of water for normal operation, and to a source of compressed air to blow water out of the sprinkler to prevent freezing during cold weather;

a turbine mounted in the housing and having a rotor which is driven by the incoming fluid and a flow directing stator; and

a speed control mechanism mounted in the housing that limits the rotational speed of the turbine when the incoming fluid is compressed air, but has substantially no effect on the rotational speed when the incoming fluid is water.

33. A rotor type sprinkler, comprising:

an outer housing having an inlet at a lower end of the housing for connection to a source of pressurized water;

a riser mounted within the outer housing for telescopic movement from an extended position to a retracted position;

a turbine mounted within the riser;

a head rotatably mounted at the upper end of the riser and including a nozzle for ejecting a stream of water over an area to be irrigated;

a drive mechanism connecting the turbine to the head for rotating the head; and

an over-spin mechanism mounted in the riser and operatively associated with the turbine to prevent over-spinning of the turbine when compressed air is fed to the inlet of the outer housing during winterizing but otherwise permitting the turbine to spin in a normal range of rotational speed during normal operation of the sprinkler when substantially entirely water is fed to the inlet of the housing at a pressure within a nominal water pressure range.

34. The sprinkler of Claim 33 wherein the over-spin mechanism includes a valve.

35. The sprinkler of Claim 34 wherein the over-spin mechanism includes a brake.

36. An arc-adjustable pop-up rotor type sprinkler, comprising:

an outer housing having an inlet at a lower end of the housing for connection to a source of pressurized water;

a riser mounted within the outer housing for telescopic movement from an extended position to a retracted position;

a turbine mounted within the riser;

a head rotatably mounted at the upper end of the riser and including a nozzle for ejecting a stream of water over an area to be irrigated;

a gear train reduction connecting the turbine to the head for rotating the head;

a reversing mechanism and an arc adjustment mechanism mounted in the riser and operatively associated with the head and the gear train reduction for causing the head to rotate between two predetermined arc limits so that the stream of water is ejected over a sector of the area to be irrigated of a predetermined size; and

an over-spin mechanism mounted in the riser and operatively associated with the turbine to prevent over-spinning of the turbine when compressed air is fed to the inlet of the outer housing during winterizing but otherwise permitting the turbine to spin in a normal range of rotational speed during normal operation of the sprinkler when substantially entirely water is fed to the inlet of the housing at a pressure within a nominal water pressure range.

37. The sprinkler of Claim 36 wherein the over-spin mechanism includes a by-pass valve.

38. The sprinkler of Claim 36 wherein the valve includes a coil spring.

39. The sprinkler of Claim 36 wherein the over-spin mechanism includes a brake.

40. The sprinkler of Claim 36 wherein the brake applies a drag force against a component of the sprinkler selected from the group consisting of the turbine, the gear train reduction, the nozzle and the head.

REMARKS

Reconsideration of the subject patent application is requested. It is believed that as a result of the prior amendment mailed on 3/10/03, claims 17-21 will be allowed. Claim 16 was canceled in that prior amendment. Furthermore, Claims 1-15 were allowed in the Office Action mailed December 23, 2002.